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USABILITY OF THE TAMPERE UNIVERSITY LIBRARY
COLLECTION MAPPING METHOD AT UNIVERSITY
OF NAMIBIA LIBRARIES

I. Introduction

The information resources offered by libraries are the backbone of research, teaching and studying at universities and the libraries actually want to ensure the availability of high-quality information resources (Tampere University Library 2011b). To develop the collections and ensure quality, libraries need to identify the present state, the strengths and weaknesses, of their subject-based collections. Facts about the subject collections and their usage are needed and the collection mapping method used by Tampere University Library provides such facts.

The main purpose of this chapter is to characterize the collection mapping method in use at Tampere University Library and assess the possibilities for its adoption by the University of Namibia Library (UNAM) in spite of differences in collections, size and circumstances.

Background of collection mapping

Collection mapping, collection evaluation and collection assessment are terms that describe the same process. Reitz (2012) sees collection evaluation as synonymous with collection assessment and defines collection assessment as “the systematic evaluation of the quality of a library collection to determine the extent to which it meets the library’s service goals and objectives and the information needs of its clientele. Deficiencies are addressed through collection development.”

The concept of collection mapping or collection assessment is not new; the idea of this professional library tool dates back to the 1940’s (Bushing 2006a, 9). According to Bushing (2006a, 10): “... collection mapping provides a broad range of operations and techniques to be selected to achieve the degree of informed collection understanding necessary in any given circumstances.” Finally, collection mapping at Tampere University Library is understood as a technique to map, evaluate and describe subject-based collections (Hyödynmaa & Alholm-Kannisto & Nurminen 2010, 43).

Collection evaluation, mapping or assessment is a process whereby the scope and balance of a library’s existing collection is systematically compared with the scope and balance of materials desired by the library user. It is intended to provide the libraries with important information and can serve as a management tool for internal analysis, for adapting the collection, as a communication tool for resource sharing possibilities or to respond systematically to budget changes. Professional collection development skills can further enhance a collection that is as appropriate as possible. (Arizona State Library, Archives and Public Records 2012.) **Whatever the size of the collection, the objectives are both responsiveness to actual and anticipated user needs and accountability of the material added to the library’s collection** (National Library of Australia 2004).

Collection evaluation methods can be grouped into collection-based methods (counting holdings, checking lists to determine the

collection's scope and depth), usage statistics (turnover rate) and user-based methods (gathering information on how clients use the collection) (Arizona State Library, Archives and Public Records 2012).

There are various techniques for gathering either quantitative data (including numbers, age or use statistics) or qualitative data (observations and analysis by informed staff and users familiar with specific subjects). The most common techniques are:

1) Shelf list measurement / Collection-centred statistical method

The shelf list method produces collection-centred statistical quantitative information on the number of titles, percentage of the total collection and average age as well as possible language divisions of the collection. Shelf lists are nowadays collected using electronic library systems. Quantitative data is gathered including the number of titles/items of a specific segment and the percentage this section constitutes of the total collection/subject area. Statistics on the age of a collection reveals currency and/or retrospective strength, keeping in mind the subject area as well as the goals of the library.

2) Usage statistics

This method can include circulation statistics, interlibrary loans, in-house use and turnover rate. The turnover rate is ascertained by dividing the number of circulations by the number of items or titles in a segment. If the usage rate is high, it indicates that this area may need more resources. A low turnover rate may suggest that the collection is not very popular with users.

3) Shelf-scanning

This technique entails the physical examination of materials on the shelf. Both the contents of the collection and the condition of the material are examined. This method, like every method, has its strengths and weaknesses. It is fast and yields immediate results,

but the results may be subjective and depend on the knowledge and expertise of the librarian or outside experts.

4) List checking

This method compares the percentage of standard titles or items against best lists or standard bibliographies. The disadvantage is that these lists rapidly become outdated. The Conspectus method commonly used in the United States is an example of a list checking method.

5) User survey

This client-centred method entails user surveys and by eliciting users' opinions, views and assessments.

6) Citation analysis

This method is more common in special or research libraries and can measure the strength of collections or recent developments. It is useful for broad subject fields and necessitates examining citations, footnotes and/or bibliographies in local theses or recent articles and scholarly books and checking them against the library holdings.

It is not necessary for libraries to follow all of these methods to achieve quantifiable results. The first three methods are the most used. (Simosko 2003; National Library of Australia 2004; Bushing 2006b; Wilén & Kortelainen 2007, 118–119; Hibner & Kelly 2010, 62, 92; Arizona State Library, Archives and Public Records 2012.)

In order to get the best results it may be worth combining collection-based evaluation methods for print resources with usage-based statistics for electronic resources (Borin & Yi 2008, 136). The changing landscape of collections may require new evaluation methods such as combining usage indicators with capacity measurement, in terms of dollar expenditure (Borin & Yi 2011, 120). Although collection evaluation techniques have changed due to changes in technology, the

purpose and benefits have remained the same: “Whatever the tool, the ‘picture’ of resources that results enables libraries to adjust their holdings to better meet their missions...” (Bushing 2006a, 9).

In Finland collection mapping is based on the work done in scientific libraries. In 2003, the Council for Finnish University Libraries initiated the Collection Map Project for Finnish University Libraries, which was continued as the Finnish Collection Map Consortium 2008–2011. The collection mapping method is an outcome of this collaboration.

The Finnish collection mapping method provides a framework to plan and carry out collection evaluation at the library. It combines both collection-centred and usage-centred methods. The method includes the determination of the volume of the subject-based collection, determination of the average age and language divisions of the print collection, shelf-scanning and usage statistics. When defining the present level and the goal level of each field collection, the application of the Conspectus technique can be useful. Defining is based on the Finnish Conspectus application, which indicates the completeness of a field collection expressed by levels from 0 to 5 (Wilén et al. 2007, 130–131; The Collection Map Project 2009a).

The Finnish collection mapping method is primarily focused on subject-based collections, but is applicable to any collection. Sharing some features of the Conspectus method, the method used in Finnish libraries is, however, more flexible and enables balanced collection evaluation.

2. The University of Namibia Library: the need for collections mapping and description

The University of Namibia (UNAM) is one of the most recently founded universities in the southern African region and was established

by an Act of Parliament on the 1st September 1992. Currently the UNAM Library includes 11 branches and eight centres.

The Library experienced problems initially as it was administered as a unit of the Registrar's department. This meant that the University Librarian could not have a seat on policy-making committees, particularly those committees that decided on budget allocations. As a result, the Library was poorly financed as it was allocated only 4% of the institution's budget. Another problem at its inception was the poor physical facilities, as the library was housed in an apartment building that was unsuitable as a Library building. It was only able to seat 85 people and its Technical Services section was housed in a different building on the other side of the campus. Furthermore, the Library did not have a balanced collection because certain subject areas were over-represented while others were inadequately represented. A small staff with limited subject knowledge backgrounds also added to the Library's problems.

With the transition from an academy to a university in 1992, the prospects for the Library and its staff improved considerably. University management acknowledged the importance of the Library as an extension of the lecture room. Financing improved significantly when the Executive Committee of the University allocated a 10% of the recurrent expenditure budget to the Library documents. (Avafia 1993, 115–123.) In 1995, the University moved its premises to a new campus. This included a dedicated Library building, a great improvement on the previous building in functionality and space.

It was recommended that the University Library's operations be computerized from the outset and in 1992 the URICA library system became operational. The library of UNAM established Internet access in June 1996 through a Point of Presence (POP) server located at the University Computer Centre (Chisenga 1999, 4; South African Development Community 1999, 40). The INNOPAC Millennium library system was introduced in 2006 following a grant from the Andrew Mellon Foundation. In contrast to the URICA library system

previously in use, INNOPAC is accessible via standard Web browsers; for the first time copy cataloguing through OCLC was possible.

The different collections within the Library are the so-called open shelf collection, reference and short loan/reserve collection, serials collection and a special collection which houses material on Namibia or by Namibian authors. Although the Library is only starting to order e-books by mid-2012, electronic database subscriptions have been provided since 2003. The Library also develops some databases with local Namibian content. (University of Namibia Library 2006–2009.)

3. Collection mapping methodology at Tampere University Library and its applicability to the UNAM Library

The collection mapping method used by Tampere University Library is an application of the Finnish method at a multidisciplinary university library. It involves all key elements except the Finnish Conspectus application. The collection mapping method focuses on subject-based collections, both print and electronic, in the teaching and research fields offered at the University of Tampere. Both the quantity and quality of each field collection of the Library are analysed. Statistical data is gathered on the volume and the usage of the subject-based collections, separately for books and journals and likewise separately for e-books, e-journals and databases. A description of each subject-based collection is written after the data has been analysed. Furthermore, the details are shared with the representatives of the subject field, namely lecturers and researchers. (Hyödynmaa et al. 2010, 45.)

Collection mapping has been carried out one subject area at a time at the Main Library with over twenty subject-based collections in the fields offered at the University of Tampere. Mapping the

collections all at once would have been excessively laborious. As the number of subject-based collections at the branch libraries is smaller, all collections at the Department of Health Sciences were mapped at the same time. As for the Department of Humanities and Education, collections were mapped one by one as at the Main Library.

Evaluating print book collection

The subject areas according to which the collections at Tampere University Library are mapped, evaluated and described are based on those described in the Finnish Collection Map Project. These subject areas are quite compatible to the shelf classes at Tampere University Library (The Collection Map Project 2009b; Tampere University Library 2011a). The book collections of the Library are therefore mapped according to shelf classes.

In Tampere University Library all searches are executed as Microsoft Access queries in the Library's own online catalogue, which is a Voyager database. In most cases, in the Main Library, the shelf classification is too rough to find focal areas in the subject-based collection. In such cases, the search is based on the classification systems and thesaurus used in the Library now or earlier. The number of titles, the age distribution and the language distribution of the subject-based collection are counted. Likewise, the age and the language distributions of the checkouts and the titles in circulation on a given day are counted. (Hyödynmaa et al. 2010, 45.)

The results of Microsoft Access queries are converted into Excel tables, where the numbers of titles are sorted by year of publication and language, see Table 1. The checkouts and titles in circulation are sorted likewise. The years of publication are grouped mainly by decade according to the recommendations of the Finnish Collection Map Project. The Excel tables provide information on the main languages of the collection and the age of the collection, likewise information

on which decade of publication is the most typical in the collection (the mode decade of publication). Combining the Excel tables yields information on the usage of titles of different ages, see Table 2, and language. Furthermore, it is also possible to obtain a ranking list of the most circulated titles as well as a list of the titles that have not circulated at all. (Hyödynmaa et al. 2010, 45–46.)

Number of titles in journalism and mass communication collection													
Year of publication	Eng.	Fin.	Ger.	Swe.	Fre.	Dan.	Nor.	Rus.	Mul.	Spa.	Est.	Por.	Total
0000-1899	0	0	0	6	1	0	0	0	0	0	0	0	7
1900-1949	41	40	20	14	2	3	1	0	0	0	1	0	122
1950-1959	47	16	13	12	2	2	0	0	0	0	0	0	92
1960-1969	144	34	34	20	7	3	3	0	0	0	0	0	245
1970-1979	242	140	43	26	9	5	1	0	4	0	0	0	470
1980-1989	766	268	201	119	48	17	28	2	2	7	0	0	1,458
1990-1999	786	282	133	84	45	22	13	2	4	1	1	1	1,374
2000-2009	786	215	31	78	3	5	7	7	0	0	0	0	1,132
2010-2014	41	8	0	2	0	0	0	0	1	0	0	0	52
Total	2,853	1,003	475	361	117	57	53	11	11	8	2	1	4,952

Table 1. Age and language distribution of the journalism and mass communication collection at Tampere University Library (2010)

Year of publication	Titles		Checkouts		In circulation (11 Nov. 2010)	
	No.	Percentage	No.	Percentage	No.	Percentage
0000-1899	7	0.1	0	0.0	0	0.0
1900-1949	122	2.5	89	0.4	8	1.0
1950-1959	92	1.9	45	0.2	3	0.4
1960-1969	245	4.9	357	1.8	13	1.6
1970-1979	470	9.5	814	4.1	37	4.6
1980-1989	1,458	29.4	3,099	15.6	101	12.7
1990-1999	1,374	27.7	7,819	39.4	222	27.9
2000-2009	1,132	22.9	7,518	37.9	383	48.1
2010-2014	52	1.1	88	0.4	30	3.8
Total	4,952	100.0	19,829	100.0	797	100.0

Table 2. Number of titles, checkouts and titles circulating on 11 November 2010 in the journalism and mass communication collection at Tampere University Library by year of publication

At the UNAM Library subject specification can be done very concisely as cataloguing is done in detail using the Dewey Decimal Classifica-

tion (DDC) system. By applying often extended class numbers (e.g. 344.41012596 for “law of dismissal of employees in Great Britain”), specific subject areas or focal areas can be identified without difficulty. The decision could/should be made to only reflect broader subject areas by limiting the DDC numbers to a certain level.

The principle of the Finnish collection mapping method is to keep the process simple. For example, it is not necessary to count every item of the whole library. At Tampere University Library, only the titles of the general loan collection, books on open shelves and books in closed stacks, and the reference collection of the field are counted. Books belonging to text-book collections, special collections, the dissertation collection or the thesis collection are excluded. In addition, only the books of the main collection are counted. For example, the Main Library is responsible for the psychology collection and the most psychology books are located in the Main Library. In the branch libraries there may be some psychology books but they are not included in the mapping.

The textbook and general loan collections are not separated at the UNAM Library and are together known as the Open Shelf Collection. Because of the geographic distribution of Library branches all over the country, a decision could be made making the Main Library representative of the whole collection. Gaps in the collections of the branch Libraries are of major concern. A collection mapping exercise could be of great value in identifying them.

Evaluating book collections by shelf-scanning

Shelf-scanning is a part of the Finnish collection mapping method. It is a qualitative method of evaluating book collections based on the librarian's expertise. The idea is that the librarian visits the bookshelves to scan the book collection of a given field. What is typical for this book collection? Is it scientific or not? Who seemed to be the target

users of the collection? Is the collection up-to-date or out-of-date assuming that the newest books are circulating? Does the collection hold both earlier editions and recent revised editions or unnecessary copies of the same book? What about the physical condition of the books? Do the books look as if they are read? One aim of shelf-scanning is to ascertain whether there are principal works and classics in the collection. Moreover, if possible, shelf-scanning together with some representatives of the discipline, lecturers and researchers is a great advantage. After scanning the librarian describes the collection in a few sentences. (National Library of Australia 2004; Bushing 2006b; Hyödynmaa et al. 2010, 46–47.)

At Tampere University Library 23 subject-based collection analyses have so far been completed. Of these collection analyses 15 included shelf-scanning. Shelf-scanning was focused on the general loan collection of each subject area. The closed stacks collection was excluded. The length of the description based on shelf-scanning varied from a few sentences to one page. Usually, one or two librarians scanned the book collection of the subject area. In four cases, the lecturers and researchers of the discipline shared their collection observations with librarians.

The results concerning 15 of the scanned subject-based book collections differed to some respect. All book collections seemed to be scientific, while some unscientific material was noticed in only three of the collections.

The physical condition of the books was generally good. In some collections, the material on the bookshelves looked as if it had been used frequently and in others not. Reasons for the non-use of books may include language, age and the specialization of the contents. The age of practical guides especially seemed to be an obstacle to usage. In some cases, depending on the subject area, the age of the books did not restrict their use; for example in general linguistics. However, some librarians expressed concern about the new material being lost

among the old material on the bookshelves. This concern was justified because most of the subject-based loan collections included material published since the 1960's, the oldest material being in the closed stacks. Assuming that the newest books were in circulation, there were fewer new than old books on the bookshelves.

Unnecessary copies, such as earlier editions, were seen as a problem in only one subject area. In most cases librarians were aware of duplicates. Multiple copies were often due to collections having been combined or to internal relocations.

Shelf-scanning also focused on serials. Only in one case was it mentioned that the collection contained only monographs and not serials. Serials, especially old ones, seemed to be quite problematic in some subject areas.

Weeding was mentioned in many cases, either it had been done recently or it was to be done at a later stage, weeding was seen as a solution to get rid of out-of-date and old material, duplicate copies, books not used and damaged material.

In addition to the physical condition and usage of information sources, librarians evaluated the quality of each subject-based collection by looking at areas such as current content, core titles and classics. The latter was the most demanding part of shelf-scanning and the aspect in which the expertise of librarians or lecturers and researchers was most helpful.

This principle could be applied in the same way to the UNAM libraries. As shelving of books is sometimes in arrears, unshelved books can also give an indication of the usage of certain material.

Volume and usage of print journals

The volume of print journal titles in a given field is counted manually at Tampere University Library. Only current subscriptions to print

journals are included. Fortunately counting is not very time-consuming because the number of print journal subscriptions is diminishing. Information on the most used journals in a given field is gathered through journal usage data which Tampere University Library organizes every year. (Hyödynmaa et al. 2010, 48.)

UNAM still relies heavily on print subscriptions because of electricity and bandwidth problems which occur frequently, especially in the rural areas. Determining the usage of print journals was only done randomly by shelveers of that section when considering possible cancellations of non-used journals. More systematic counting would only be possible for journals older than one year as they are bound and available for loan.

Volume and usage of e-journals

The electronic collection of Tampere University Library is defined as electronic material that can be found and accessed through the Library's Nelli portal at the University of Tampere. Both mapping of electronic material like e-journals, e-books, databases and e-reference works and the usage of e-journals, is based on the information available through Nelli portal. Electronic subject collections are gathered from Nelli's categories and subcategories. Categorizing databases by subject was done at Tampere University Library but categorizing of individual e-journals by subject is dependent on the categories predefined by the SFX link server of Ex Libris. Mapping the electronic collections of various subject areas, especially e-journals, is quite laborious. (Hyödynmaa et al. 2010, 47.)

The electronic collection includes both licensed e-material and selected open access material. The volume of the e-journal titles in the subject area is counted and usage statistics are compiled for them and converted into Excel tables. The ten most used e-journals in the field are ranked according to full-text article requests. Usage statistics

are not collected for open access journals or the e-journals outside the licensed packages of the Library. (Hyödynmaa et al. 2010, 47.)

E-journals in UNAM can also be found in packages, as individual subscriptions and via open access. Data on subscription based e-journals is also gathered using the integrated statistical modules of the subscription databases. Although collection mapping at Tampere University Library has not included calculating the costs per article depending on the usage of e-journals, it would be useful to do this at the UNAM Library.

Quality of print and e-journals

A new feature of the collection mapping method used by Tampere University Library is that of evaluating the quality of the print and e-journals of a subject-based collection. This evaluation is based on the work done in the Finnish Publication Forum Project. The subscribed journals of a subject-based collection at Tampere University Library could be compared with the journals classified in the Finnish Publication Forum Project.

During the project, the publication channels were rated by fields in categories: level 1 covers scientific publication channels and level 2 covers the leading scientific publication channels; moreover, level 3 covers the world top publication channels in the respective fields (Auranen 2012, The Finnish Publication Forum Project 2012). It is possible to obtain the subject-based lists of journals with Publication Forum classification and upload them into Excel tables. As to the journal subscriptions of the field, it is important to ascertain if Tampere University Library subscribes to journals of level 1, 2 or 3. As most of the titles in the Finnish Publication Forum database are in English, the same kind of comparison could possibly be done at UNAM Library.

Quality evaluation has not been done in the UNAM Library, but using both Scopus and the title list from the Finnish Publication Forum database would be a helpful method to start that process.

Mapping of e-books and databases

At Tampere University Library a subject-based collection includes different document types. In addition to print books, print journals and e-journals, the volume of e-books and databases of the field is counted. The databases comprise both full-text databases, e.g. Ebsco-host Academic Search Premier and SAGE Journals Online (Premier), and reference databases like CIOs ComAbstracts and PAIS International. The titles of the e-book packages and the databases are listed in the collection description. For the present, the usage of e-books and databases is not recorded at Tampere University Library. The number of titles of different document types illustrates the development of electronic publishing in the field and in the subject-based collections, see Table 3.

Document types	Number of titles
Print books	4,952
E-books (Ebrary, NetLibrary)	about 500
E-reference works	24
Print journals (subscriptions)	13
E-journals	about 100
Databases (both full-text and reference databases)	10

Table 3. Size of the journalism and mass communication collection at Tampere University Library (2010)

The UNAM Library only received their first e-books in June 2012. Reference databases are not commonly found in UNAM's collections either and usage statistics are not maintained.

4. Conclusion

The principles, methods and techniques of collection mapping are manifold, and not all of these methods need to be followed in order to achieve measureable results. The UNAM Library can learn from its counterpart Tampere University Library how best to adopt the methods of collection-centred statistical method with usage statistics and shelf-scanning to achieve outcomes that will show the usage, balance, currency and physical condition of certain areas of the collection. In the UNAM Library statistics were gathered but only haphazardly and more to show the growth of the collections without interpreting the data for collection management purposes.

Lessons to be learned:

- do not attempt to map the entire collection; the process is time consuming
- rank the most frequently used titles of books as well as journal titles
- hand count the usage of print journals before shelving for an estimated turnover rate for material that is not borrowed
- include faculty staff when shelf-scanning
- after follow-up report when subject area is mapped, make possible changes to the collection development of that area and weed where necessary.

Certain background instruments like electronic resource management tools, history of statistics gathered on usage and prices, evaluation of quality journals, federated search options are lacking at the UNAM Library. In order to build better and more appropriate collections, collection mapping is one of the processes that should be started as soon as possible.

Collection mapping proved to be a successful tool for Tampere University Library to evaluate collections and use the information so

obtained to develop balanced subject collections. This exercise could only benefit collection management at the UNAM Library.

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